

**Makita**®

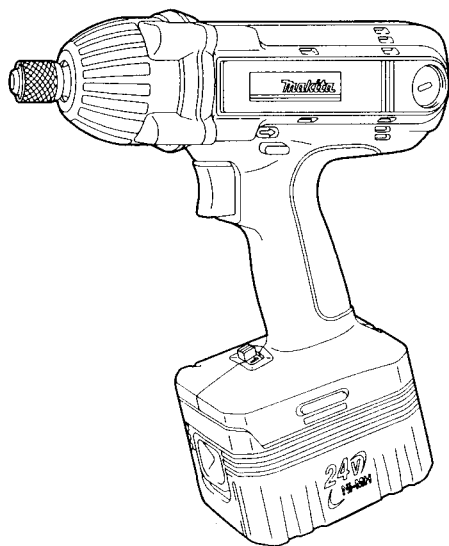
アメリカ

# Cordless Impact Driver

Equipped with Electric Brake

## INSTRUCTION MANUAL

### BTD200



SH	Ni-MH 1.7 Ah		
SF	Ni-MH 3.0 Ah		

# SPECIFICATIONS

Capacities			No load speed (RPM)		Impacts per minute		Overall length	Net weight
Wood screw	Self drilling screw	Hex screw	High	Low	High	Low		
6 mm (1/4")	6 mm (1/4")	6 mm (1/4")	0 – 2,000 /min.	0 – 1,600 /min.	0 – 3,000	0 – 2,500	232 mm (9-1/8")	2.9 kg (6.3 lbs)

Battery Cartridge	Voltage	Battery Charger	Input	Output	Charging time
B2417	24 V	DC24SA	A.C. only 50 Hz – 60 Hz	D.C. 7.2 V – 12 V	30 min.
B2430	24 V	DC24SA	A.C. only 50 Hz – 60 Hz	D.C. 7.2 V – 12 V	60 min.

- Manufacturer reserves the right to change specifications without notice.
- Note: Specifications may differ from country to country.

WARNING: For your personal safety, READ and understand before using.  
SAVE THESE INSTRUCTIONS FOR FUTURE REFERENCE.

# GENERAL SAFETY RULES

USA003-1

## (For All Battery Operated Tools)

**WARNING!** Read and understand all instructions. Failure to follow all instructions listed below, may result in electric shock, fire and/or serious personal injury.

## SAVE THESE INSTRUCTIONS

### **Work Area**

1. **Keep your work area clean and well lit.** Cluttered benches and dark areas invite accidents.
2. **Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases, or dust.** Power tools create sparks which may ignite the dust or fumes.
3. **Keep bystanders, children, and visitors away while operating a power tool.** Distractions can cause you to lose control.

### **Electrical Safety**

4. **A battery operated tool with integral batteries or a separate battery pack must be recharged only with the specified charger for the battery.** A charger that may be suitable for one type of battery may create a risk of fire when used with another battery.
5. **Use battery operated tool only with specifically designated battery pack.** Use of any other batteries may create a risk of fire.

### **Personal Safety**

6. **Stay alert, watch what you are doing, and use common sense when operating a power tool. Do not use tool while tired or under the influence of drugs, alcohol, or medication.** A moment of inattention while operating power tools may result in serious personal injury.
7. **Dress properly. Do not wear loose clothing or jewelry. Contain long hair. Keep your hair, clothing, and gloves away from moving parts.** Loose clothes, jewelry, or long hair can be caught in moving parts.
8. **Avoid accidental starting. Be sure switch is in the locked or off position before inserting battery pack.** Carrying tools with your finger on the switch or inserting the battery pack into a tool with the switch on invites accidents.
9. **Remove adjusting keys or wrenches before turning the tool on.** A wrench or a key that is left attached to a rotating part of the tool may result in personal injury.
10. **Do not overreach. Keep proper footing and balance at all times.** Proper footing and balance enable better control of the tool in unexpected situations.
11. **Use safety equipment. Always wear eye protection.** Dust mask, non-skid safety shoes, hard hat, or hearing protection must be used for appropriate conditions.

## **Tool Use and Care**

12. **Use clamps or other practical way to secure and support the workpiece to a stable platform.** Holding the work by hand or against your body is unstable and may lead to loss of control.
13. **Do not force tool. Use the correct tool for your application.** The correct tool will do the job better and safer at the rate for which it is designed.
14. **Do not use tool if switch does not turn it on or off.** A tool that cannot be controlled with the switch is dangerous and must be repaired.
15. **Disconnect battery pack from tool or place the switch in the locked or off position before making any adjustments, changing accessories, or storing the tool.** Such preventive safety measures reduce the risk of starting the tool accidentally.
16. **Store idle tools out of reach of children and other untrained persons.** Tools are dangerous in the hands of untrained users.
17. **When battery pack is not in use, keep it away from other metal objects like: paper clips, coins, keys, nails, screws, or other small metal objects that can make a connection from one terminal to another.** Shorting the battery terminals together may cause sparks, burns, or a fire.
18. **Maintain tools with care. Keep cutting tools sharp and clean.** Properly maintained tools with sharp cutting edge are less likely to bind and are easier to control.
19. **Check for misalignment or binding of moving parts, breakage of parts, and any other condition that may affect the tool's operation. If damaged, have the tool serviced before using.** Many accidents are caused by poorly maintained tools.
20. **Use only accessories that are recommended by the manufacturer for your model.** Accessories that may be suitable for one tool may create a risk of injury when used on another tool.

## **Service**

21. **Tool service must be performed only by qualified repair personnel.** Service or maintenance performed by unqualified personnel may result in a risk of injury.
22. **When servicing a tool, use only identical replacement parts. Follow instructions in the Maintenance section of this manual.** Use of unauthorized parts or failure to follow Maintenance Instructions may create a risk of shock or injury.

## Specific Safety Rules

USB024 1

1. Hold tool by insulated gripping surfaces when performing an operation where the cutting tool may contact hidden wiring. Contact with a "live" wire will also make exposed metal parts of the tool "live" and shock the operator.
2. Be aware that this tool is always in an operating condition, because it does not have to be plugged into an electrical outlet.
3. Always be sure you have a firm footing.  
Be sure no one is below when using the tool in high locations.
4. Hold the tool firmly.
5. Wear ear protectors.

## SYMBOLS


The followings show the symbols used for tool.

V ..... volts

===== ..... direct current

$n_0$  ..... no load speed

.../min ..... revolutions or reciprocation per minute

 ..... number of blow

# IMPORTANT SAFETY INSTRUCTIONS FOR CHARGER & BATTERY CARTRIDGE

1. **SAVE THESE INSTRUCTIONS** — This manual contains important safety and operating instructions for battery charger.
2. Before using battery charger, read all instructions and cautionary markings on (1) battery charger, (2) battery, and (3) product using battery.
3. **CAUTION** — To reduce risk of injury, charge only MAKITA rechargeable batteries marked on the charger label. Other types of batteries may burst causing personal injury and damage.
4. Do not expose charger to rain or snow.
5. Use of an attachment not recommended or sold by the battery charger manufacturer may result in a risk of fire, electric shock, or injury to persons.
6. To reduce risk of damage to electric plug and cord, pull by plug rather than cord when disconnecting charger.
7. Make sure cord is located so that it will not be stepped on, tripped over, or otherwise subjected to damage or stress.
8. An extension cord should not be used unless absolutely necessary. Use of improper extension cord could result in a risk of fire and electric shock. If extension cord must be used, make sure:
  - a. That pins on plug of extension cord are the same number, size, and shape as those of plug on charger;
  - b. That extension cord is properly wired and in good electrical condition; and
  - c. That wire size is at least as large as the one specified in the table below.

**TABLE 1**  
**RECOMMENDED MINIMUM AWG SIZE FOR**  
**EXTENSION CORDS FOR BATTERY CHARGERS**

Length of Cord (Feet)	25	50	100	150
AWG Size of Cord	18	18	18	16

9. Do not operate charger with damaged cord or plug — replace them immediately.
10. Do not operate charger if it has received a sharp blow, been dropped, or otherwise damaged in any way; take it to a qualified serviceman.
11. Do not disassemble charger or battery cartridge; take it to a qualified serviceman when service or repair is required. Incorrect reassembly may result in a risk of electric shock or fire.
12. To reduce risk of electric shock, unplug charger from outlet before attempting any maintenance or cleaning. Turning off controls will not reduce this risk.
13. If operating time has become excessively shorter, stop operating immediately. It may result in a risk of overheating, possible burns and even an explosion.
14. If electrolyte gets into your eyes, rinse them out with clear water and seek medical attention right away. It may result in loss of your eyesight.

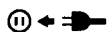






## ADDITIONAL SAFETY RULES FOR CHARGER & BATTERY CARTRIDGE

1. Do not charge Battery Cartridge when temperature is BELOW 10°C (50°F) or ABOVE 40°C (104°F).
2. Do not attempt to use a step-up transformer, an engine generator or DC power receptacle.
3. Do not allow anything to cover or clog the charger vents.
4. A battery short can cause a large current flow, overheating, possible burns and even a breakdown.
  - (1) Do not touch the terminals with any conductive material.
  - (2) Avoid storing battery cartridge in a container with other metal objects such as nails, coins, etc.
  - (3) Do not expose battery cartridge to water or rain.
5. Do not store the tool and Battery Cartridge in locations where the temperature may reach or exceed 50°C (122°F).
6. Do not incinerate the Battery Cartridge even if it is severely damaged or is completely worn out. The battery cartridge can explode in a fire.

**SAVE THESE INSTRUCTIONS.**

### Symbols

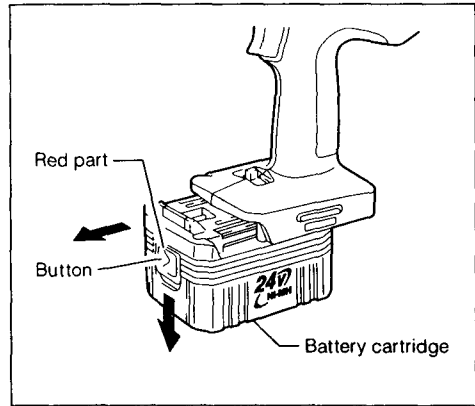
The following show the symbols used for the charger. Be sure that you understand their meaning before use.

- |   |   |
|---|---|
|  | <input type="checkbox"/> Ready to charge        |
|  | <input type="checkbox"/> Charging               |
|  | <input type="checkbox"/> Charging complete      |
|  | <input type="checkbox"/> Delay charge (Cooling) |
|  | <input type="checkbox"/> Defective battery      |
|  | <input type="checkbox"/> Conditioning           |
|  | <input type="checkbox"/> Cooling abnormality    |

## FUNCTIONAL DESCRIPTION

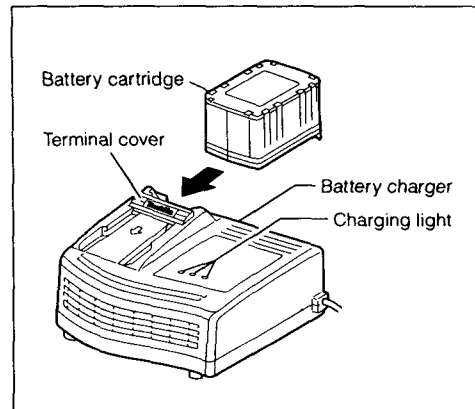
### Installing or removing battery cartridge

- Always switch off the tool before insertion or removal of the battery cartridge.
- To remove the battery cartridge, withdraw it from the tool while sliding the button on the cartridge.
- To insert the battery cartridge, align the tongue on the battery cartridge with the groove in the housing and slip it into place. Always insert it all the way until it locks in place with a little click. If you can see the red part on the upper side of the button, it is not locked completely. Insert it fully until the red part cannot be seen. If not, it may accidentally fall out of the tool, causing injury to you or someone around you.
- Do not use force when inserting the battery cartridge. If the cartridge does not slide in easily, it is not being inserted correctly.



### Charging

1. Plug the battery charger into your power source. Two charging lights will flash in green color repeatedly.
2. Insert the battery cartridge into charger until it stops adjusting to the guide of charger. Terminal cover of charger can be opened with inserting and closed with pulling out the battery cartridge.
3. When the battery cartridge is inserted, the charging light color will change from green to red and charging will begin. The charging light will keep lighting up lit steadily during charging.  
One red charging light indicates charged condition in 0 – 80% and two red ones indicates 80 – 100%.
4. With finish of charge, the charging lights will change from two red ones to two green ones.  
The charging time is as follows:  
Battery B2417: approx. 30 minutes.  
Battery B2430: approx. 60 minutes.
5. If you leave the battery cartridge in the charger after the charging cycle is complete, the charger will switch into its "trickle charge (maintenance charge)" mode which will last approximately 24 hours.
6. After charging, unplug the charger from the power source.





## **Cooling system**

- This charger is equipped with cooling fan for heated battery in order to enable the battery to prove its own performance. Sound of cooling air comes out during cooling, which means not trouble on the charger.
- Yellow light will flash for warning in the following cases.
  - Trouble on cooling fan
  - Incomplete cool down of battery, such as, being clogged with dustThe battery can be charged in spite of the yellow warning light. But the charging time will be longer than usual in this case.  
Check the sound of cooling fan, vent on the charger and battery, which can be sometime clogged with dust.
- The cooling system is in order although no sound of cooling fan comes out, if the yellow warning light will not flash.
- Always keep clean the vent on charger and battery for cooling.
- The products should be sent to repair or maintenance, if the yellow warning light will frequently flash.

## **Conditioning charge**

Conditioning charge can extend the life of battery by automatically searching the optimum charging condition for the batteries in every situation.

The battery employed in the following conditions repeatedly, will be worn out shortly, and yellow warning light may flash.

1. Recharge of battery with its high temperature
2. Recharge of battery with its low temperature
3. Recharge of full charged battery
4. Over-discharge of battery (continue to discharge battery in spite of down of power.)
5. Recharge under broken cooling system

The charging time of such battery is longer than usual.

## **Trickle charge (Maintenance charge)**

If you leave the battery cartridge in the charger to prevent spontaneous discharging after full charge, the charger will switch into its "trickle charge (maintenance charge)" mode and keep the battery cartridge fresh and fully charged.

## **Tips for maintaining maximum battery life**

1. Charge the battery cartridge before completely discharged.  
Always stop tool operation and charge the battery cartridge when you notice less tool power.
2. Never recharge a fully charged battery cartridge.  
Overcharging shortens the battery service life.
3. Charge the battery cartridge with room temperature at 10°C – 40°C (50°F – 104°F).  
Let a hot battery cartridge cool down before charging it.
4. Charge the Nickel Metal Hydride battery cartridge when you do not use it for more than six months.

**NOTE:**

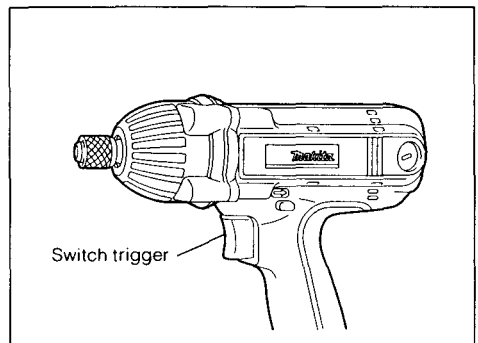
- The battery charger is for charging Makita-battery cartridge. Never use it for other purposes or for other manufacturer's batteries.
- When you charge a new battery cartridge or a battery cartridge which has not been used for a long period of time, it may not accept a full charge. This is a normal condition and does not indicate a problem. You can recharge the battery cartridge fully after discharging it completely and recharging a couple of times.
- If you charge a battery cartridge from a just-operated tool or a battery cartridge which has been left in a location exposed to direct sunlight for a long time, the charging light may flash in red color. If this occurs, wait for a while. Charging will begin after the battery cartridge is cooled by the cooling fan installed in the charger. When the temperature on battery is more than approx. 70°C, two charging lights may flash in red color, and when approx. 50°C – 70°C, one charging light in red color.
- If the charging light flashes alternately in green and red color, charging is not possible. The terminals on the charger or battery cartridge are clogged with dust or the battery cartridge is worn out or damaged.
- Any of the following conditions indicates damage to the charger and/or battery cartridge. Ask your Makita Authorized or Factory Service Center to check them.
  - 1) The charging light does not flash (green) when the battery charger is plugged into a power source.
  - 2) The charging light does not light up or flash (red) when the battery is inserted in the charger port.
  - 3) Charging is not completed at even more than two hours after red light comes ON at start of charging.

**Switch action**

**CAUTION:**

Before inserting the battery cartridge into the tool, always check to see that the switch trigger actuates properly and returns to the "OFF" position when released.

To start the tool, simply pull the trigger. Tool speed is increased by increasing pressure on the trigger. Release the trigger to stop.

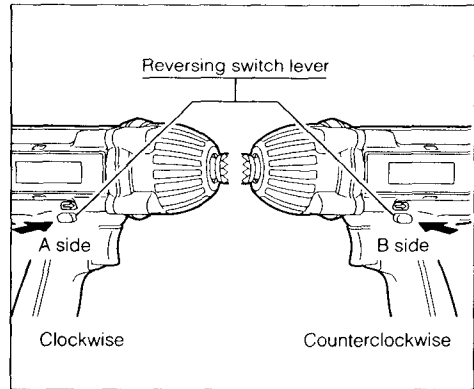


## Reversing switch action

### CAUTION:

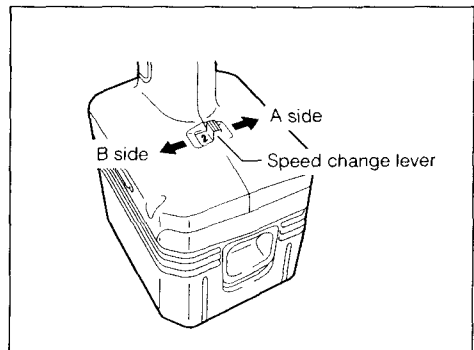
- Always check the direction of rotation before operation.
- Use the reversing switch only after the tool comes to a complete stop. Changing the direction of rotation before the tool stops may damage the tool.
- When not operating the tool, always set the reversing switch lever to the neutral position.

This tool has a reversing switch to change the direction of rotation. Depress the reversing switch lever from the A side for clockwise rotation or from the B side for counterclockwise rotation. When the switch lever is in the neutral position, the switch trigger cannot be pulled.



## Speed change

To change the speed, first switch off the tool and then slide the speed change lever to the "A" side (2) for high speed or "B" side (1) for low speed. Be sure that the speed change lever is set to the correct position before operation. Use the right speed for your job.



### CAUTION:

- Always set the speed change lever fully to the correct position. If you operate the tool with the speed change lever positioned *half-way* between the "A" side (2) and "B" side (1), the tool may be damaged.
- Do not use the speed change lever while the tool is running. The tool may be damaged.

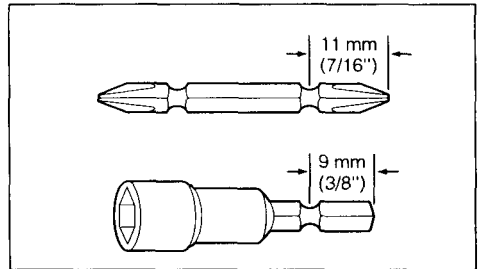
## ASSEMBLY

### Installing or removing driver bit

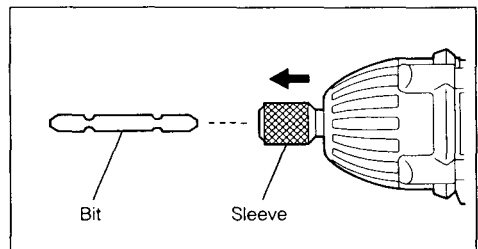
#### CAUTION:

Always be sure that the tool is switched off and the battery cartridge is removed before installing or removing the bit.

Use only the driver bit or socket bit shown in the figure. Do not use any other driver bit or socket bit.



To install the bit, pull the sleeve in the direction of the arrow and insert the bit into the sleeve as far as it will go. Then release the sleeve to secure the bit. To remove the bit, pull the sleeve in the direction of the arrow and pull the bit out firmly.



#### NOTE:

If the bit is not inserted deep enough into the sleeve, the sleeve will not return to its original position and the bit will not be secured. In this case, try re-inserting the bit according to the instructions above.

## OPERATION

#### CAUTION:

- Always insert the battery cartridge all the way until it locks in place. If you can see the red part on the upper side of the button, it is not locked completely. Insert it fully until the red part cannot be seen. If not, it may accidentally fall out of the tool, causing injury to you or someone around you.
- When operating overhead, always make sure the battery cartridge is locked securely so that it will not be fallen out of the tool. If not, it may accidentally fall out of the tool, causing injury to you or someone around you.
- Make sure that the driver bit is inserted straight in the screw head, or the screw and/or bit may be damaged.
- When driving wood screws, predrill pilot holes to make driving easier and to prevent splitting of the workpiece.
- If the tool is operated continuously until the battery cartridge has discharged, allow the tool to rest for 15 minutes before proceeding with a fresh battery.

Hold the tool firmly and place the point of the driver bit in the screw head. Apply forward pressure to the tool to the extent that the bit will not slip off the screw and turn the tool on to start operation.

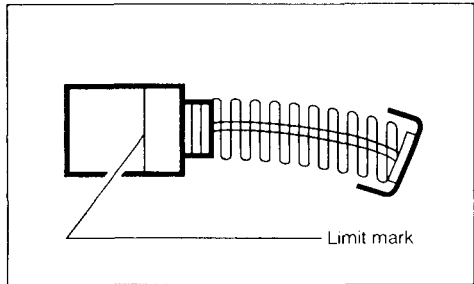
## MAINTENANCE

### CAUTION:

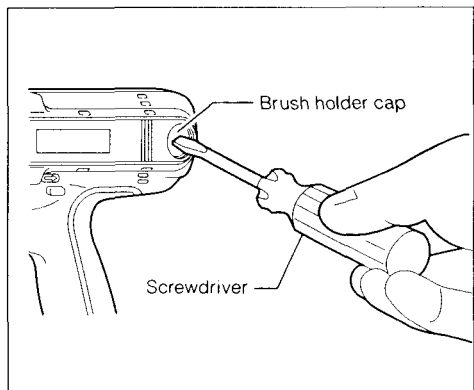
Always be sure that the tool is switched off and the battery cartridge is removed before attempting to perform inspection or maintenance.

### Replacing carbon brushes

Remove and check the carbon brushes regularly. Replace when they wear down to the limit mark. Keep the carbon brushes clean and free to slip in the holders. Both carbon brushes should be replaced at the same time. Use only identical carbon brushes.



Use a screwdriver to remove the brush holder caps. Take out the worn carbon brushes, insert the new ones and secure the brush holder caps.



To maintain product SAFETY and RELIABILITY, repairs, maintenance or adjustment should be performed by Makita Authorized or Factory Service Centers, always using Makita replacement parts.


# ACCESSORIES

**CAUTION:**

These accessories or attachments are recommended for use with your Makita tool specified in this manual. The use of any other accessories or attachments might present a risk of injury to persons. The accessories or attachments should be used only in the proper and intended manner.

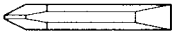
• **Bits**

	Size	Part No.
Phillips	# 2	784214-0A
	# 3	784215-0A




• **Double-ended #2 Phillips / Slotted bit**

1-3/4" long: Part No. 784614-0  
2-1/2" long: Part No. 784613-A

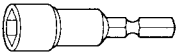


• **Phillips bit**

Part No.	Size	L (mm)
784202-3	No.2	45 (1-3/4")
784203-1		65 (2-5/8")
784206-5		110 (4-3/8")
784207-3		150 (5-7/8")

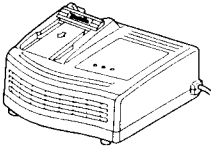


• **Magnetic nutsetter**

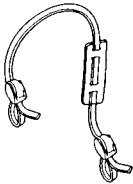


Part No.	Size
784819-A	1/4"
784820-A	5/16"
784821-A	3/8"

• **High Capacity Battery charger  
Model DC24SA**

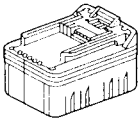


• **Shoulder strap**



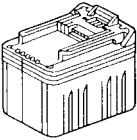
• **Ni-MH (Nickel Metal Hydride)  
battery B2417**

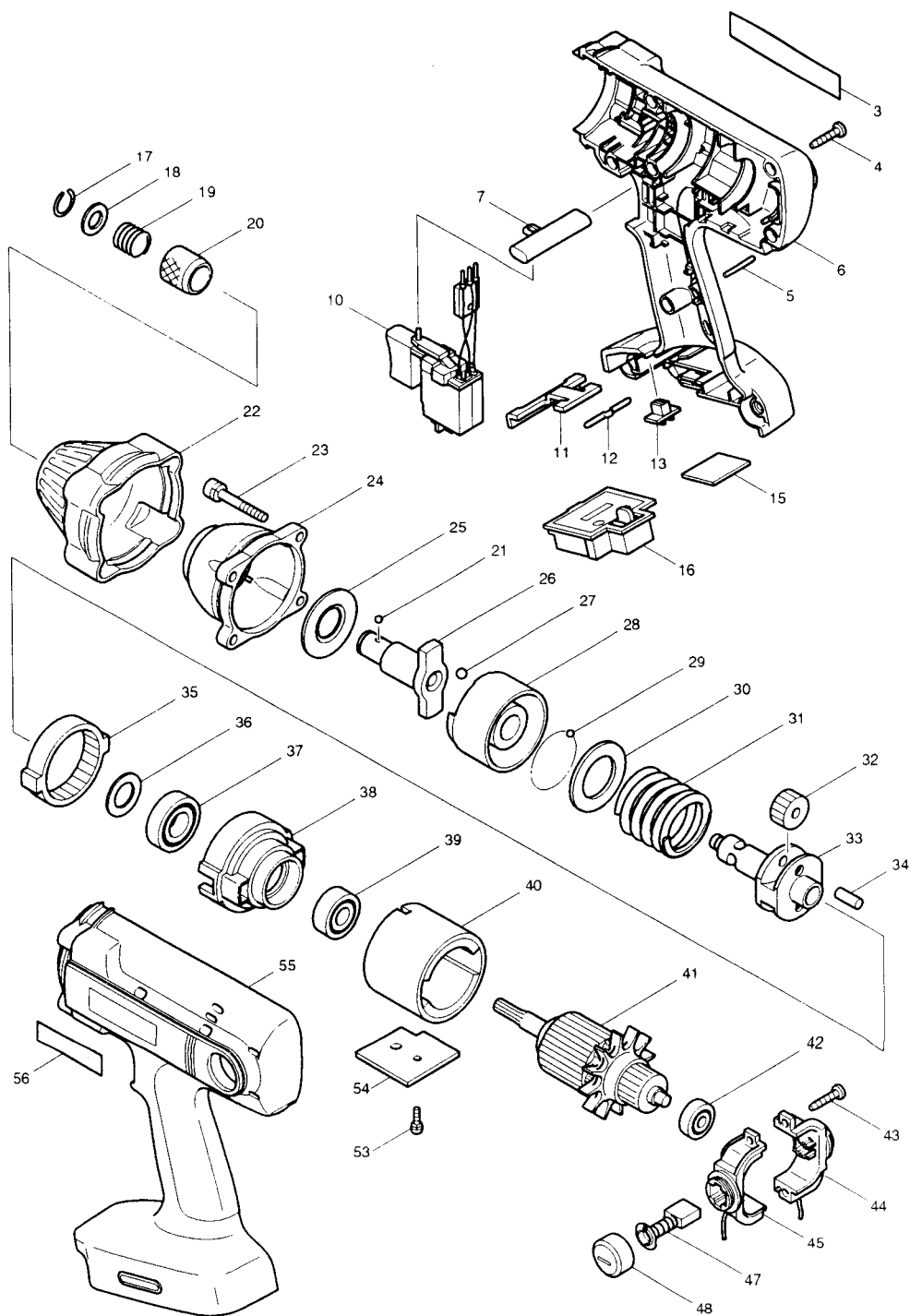
Part No. 193128-2



• **Ni-MH (Nickel Metal Hydride)  
battery B2430**

Part No. 193131-3





ITEM NO.	DESCRIPTION	NO. USED	ITEM NO.	DESCRIPTION	NO. USED
3	NAME PLATE BTD200	1	29	STEEL BALL 4	25
4	TAPPING SCREW 4X18	9	30	FLAT WASHER 28	1
5	PIN 2.5	1	31	COMPRESSION SPRING 30	1
6	HOUSING SET	1	32	SPUR GEAR 24	2
	INC 55		33	SPINDLE	1
7	F/R CHANGE LEVER	1	34	PIN 6	2
10	SWITCH	1	35	INTERNAL GEAR 55	1
11	SUPPORT PLATE	1	36	FLAT WASHER 15	1
12	LEAF SPRING	1	37	BALL BEARING 6002LLB	1
13	H/L CHANGE LEVER	1	38	INTERNAL GEAR CASE	1
15	PLATE	1	39	BALL BEARING 6000LLB	1
16	TERMINAL	1	40	YOKE UNIT	1
17	RING SPRING 12	1	41	ARMATURE ASS'Y	1
18	FLAT WASHER 14	1		INC. 39.42	
19	COMPRESSION SPRING 14	1	42	BALL BEARING 607LLB	1
20	SLEEVE	1	43	TAPPING SCREW 4X18	2
21	STEEL BALL 4	2	44	BRUSH HOLDER	1
22	BUMPER	1	45	BRUSH HOLDER	1
23	HEX. SOCKET HEAD BOLT M5X35	4	47	CARBON BRUSH CB-432	1
24	HAMMER CASE COMPLETE	1	48	HOLDER CAP	2
25	FLAT WASHER 18	1	53	PAN HEAD SCREW M3X8	1
26	ANVIL	1	54	HEAT SINK	1
27	STEEL BALL 5.6	2	55	HOUSING SET	1
28	HAMMER	1		INC 6	
			56	MAKITA LABEL	1

## MAKITA LIMITED ONE YEAR WARRANTY

### Warranty Policy

Every Makita tool is thoroughly inspected and tested before leaving the factory. It is warranted to be free of defects from workmanship and materials for the period of ONE YEAR from the date of original purchase. Should any trouble develop during this one-year period, return the COMPLETE tool, freight prepaid, to one of Makita's Factory or Authorized Service Centers. If inspection shows the trouble is caused by defective workmanship or material, Makita will repair (or at our option, replace) without charge.

This Warranty does not apply where:

- repairs have been made or attempted by others;
- repairs are required because of normal wear and tear;
- The tool has been abused, misused or improperly maintained;
- alterations have been made to the tool.

IN NO EVENT SHALL MAKITA BE LIABLE FOR ANY INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES FROM THE SALE OR USE OF THE PRODUCT. THIS DISCLAIMER APPLIES BOTH DURING AND AFTER THE TERM OF THIS WARRANTY.

MAKITA DISCLAIMS LIABILITY FOR ANY IMPLIED WARRANTIES, INCLUDING IMPLIED WARRANTIES OF "MERCHANTABILITY" AND "FITNESS FOR A SPECIFIC PURPOSE," AFTER THE ONE-YEAR TERM OF THIS WARRANTY.

This Warranty gives you specific legal rights, and you may also have other rights which vary from state to state. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. Some states do not allow limitation on how long an implied warranty lasts, so the above limitation may not apply to you.

**Makita Corporation**

3-11-8, Sumiyoshi-cho,  
Anjo, Aichi 446-8502 Japan

884340-064

PRINTED IN JAPAN

2000-6N